

WHAT IS CLAIMED IS:

1. An ink-jet head comprising:

a passage unit formed with a plurality of nozzles for
5 ejecting ink, and including a plurality of individual ink
passages each leading via a pressure chamber to the nozzle,
and

a reservoir unit bonded to the passage unit by being
pressurized, including an ink reservoir extending along a
10 bonding surface between the reservoir unit and the passage
unit, to reserve ink supplied from an ink tank and supply
the reserved ink to the passage unit,

wherein the ink reservoir is formed therein with one
or more pillars supporting two opposite walls of the ink
15 reservoir both extending perpendicularly to a direction
across the bonding surface between the reservoir unit and
the passage unit.

2. The ink-jet head according to claim 1, wherein
20 the ink reservoir has an elongated shape elongated in one
direction along the bonding surface, and a cross section of
the pillar has an elongated shape elongated in the one
direction.

25 3. The ink-jet head according to claim 1, wherein,

in the ink reservoir, the pillar is disposed near an outlet port of the ink reservoir.

4. The ink-jet head according to claim 1,

5 wherein the bonding surface of the reservoir unit has a protruding area bonded to the passage unit, and a recessed area with a protruding amount thereof toward the passage unit being smaller than that of the protruding area, and

10 wherein an actuator unit for applying an ejection energy to ink in the pressure chamber is bonded to a region on a surface of the passage unit facing the recessed area.

5. The ink-jet head according to claim 4, wherein
15 at least a part of the pillar overlaps with the protruding area with respect to a direction along the bonding surface.

6. The ink-jet head according to claim 5, wherein
the ink reservoir has an elongated shape elongated in one
20 direction along the bonding surface, and a plurality of pillars are arranged in a zigzag manner with respect to the one direction.

7. The ink-jet head according to claim 1, wherein
25 the reservoir unit is constituted by a plurality of plates

laminated in a direction across the bonding surface.

8. An ink-jet head comprising:

a first passage unit formed with a plurality of
5 nozzles for ejecting ink, and

a second passage unit bonded to the first passage
unit by being pressurized,

wherein the first passage unit includes a plurality
of individual ink passages each leading via a pressure
10 chamber to the nozzle,

wherein the second passage unit includes a common ink
passage through which ink to be supplied to the individual
ink passages passes, and

wherein the common ink passage is formed therein with
15 one or more pillars supporting two opposite walls of the
common ink passage both extending perpendicularly to a
direction across a bonding surface between the second
passage unit and the first passage unit.

20 9. An ink-jet head comprising:

a passage unit formed with a plurality of nozzles for
ejecting ink,

a reservoir unit bonded to the passage unit, by being
pressurized, at a plurality of protruding areas thereof,
25 and having an elongated shape elongated in one direction

along a bonding surface between the reservoir unit and the passage unit, and

a plurality of actuator units for applying an ejection energy to ink in the passage unit, bonded to the passage unit in a zigzag pattern with respect to the one direction,

wherein the passage unit includes:

a common ink chamber,

a plurality of first connecting passages each connecting an inlet port of the common ink chamber with a first connecting port formed on a surface of the passage unit, and

a plurality of individual ink passages each extending from an outlet port of the common ink chamber through a pressure chamber to the nozzle;

wherein the reservoir unit includes:

an ink reservoir extending along the bonding surface to have an elongated shape elongated in the one direction,

a supply passage connecting an inlet port of the ink reservoir with a supply port formed on a surface of the reservoir unit, and

a plurality of second connecting passages each connecting an outlet port of the ink reservoir with a second connecting port formed on the surface of the reservoir unit, each of the second connecting passages

being connected to the corresponding first connecting passage so as to communicate the ink reservoir with the common ink chamber;

5 wherein the ink reservoir is formed therein a plurality of pillars having a cross sectional shape elongated in the one direction and supporting two opposite walls of the ink reservoir both extending perpendicularly to a direction across the bonding surface between the reservoir unit and the passage unit; and

10 wherein at least one of the pillars is formed with respect to each protruding area, and at least a part of the pillar overlaps with the corresponding protruding area with respect to a direction along the bonding surface.

15 10. The ink-jet head according to claim 9, wherein the reservoir unit is constituted by a first plate formed with the supply passage, and a second plate formed with the second connecting passages and laminated with the first plate to define the ink reservoir with the first plate.

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